nanoInk NETZWERK

managed by Cluster Nanotechnology

Special inks and industrial inkjet printing systems

www.nanoink.de

Network nanoInk

The point of contact “nanoInk” offers individual solutions for your ideas regarding industrial printing processes, specialty inks and process technologies.

- Bundled interdisciplinary expertise (e.g. on raw materials, dispersing techniques, ink formulations, printing systems, analytics, nanotechnology, ...)
- Application-specific development and characterization of special/ nano inks
- Consulting and professional exchange within the network as well as with external stakeholders/experts
- Implementation and management of tailor-made cooperation projects (incl. funding advice)
- Joint public relations work, organisation of networking events, status meetings, workshops, seminars and trade fair participations

Become a partner!

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Network partners

The network nanoInk comprises small to medium-sized enterprises, large enterprises and research institutions. Each partner offers outstanding know-how in the areas of raw materials, dispersion techniques, ink formulation, printing systems, substrates and process-integrated analytics.

By bundling these **interdisciplinary expertise** and taking mutual benefit of **synergy effects**, nanoInk offers solution-oriented development services even for complex problems. Since its foundation in 2014 nanoInk has been managed by the Nanoinitiative Bayern GmbH.

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Raw materials and functionalisation


Dispersing techniques and process analytics


Ink formulation and printing systems

Aims of the Network

nanoInk is an open cooperation network offering enterprises and research institutes a platform for mutual **professional exchange**, interdisciplinary **cooperation projects**, and targeted **public relations** work. Focus of the interdisciplinary network is the development of nano and special inks as well as the further development of process technologies and printing systems.

The network management coordinates joint cooperation projects and acts as an international point of contact for business inquiries.

From Special Inks

Many different components turn a drop of ink into a highly complex, technical structure, offering great potential for development of new applications.

Tailored to your applications / specifications the network nanoInk develops innovative special inks e.g. based on **functional nanoparticles**, such as nano silver, nano carbons, or nano ITO.

Applications

In **decorative printing**, the use of special inks offers great potential, for example in the development of innovative color impressions. Growing markets include photo, books, label printing, as well as contactless printing on textiles, glass, floor panels, metal and other materials.

Smart Inks are formulations made of conductive, magnetic or fluorescent nanoparticles and are used for counterfeit protection, codes and markings in the packaging industry as well as in functional textiles and polymers.

Printed electronics is one of the key technologies for the future development of electronic applications. Based on carbon nanotubes (CNTs) and silver nanoparticles, conductive inks are used for the design of electronic devices like antennas (RFIDs), printed circuit boards, smart textiles, flexible displays or photovoltaic modules.

In **additive manufacturing**, nano inks are used because of their diverse functional properties.

To Process Technologies

The production of nanoinks is a demanding, multi-step process. Of crucial importance is the **dispersion and stabilization of the nanoparticles**, e.g. to avoid reagglomeration problems.

The network offers a variety of mixing, dispersing and grinding processes. Also available are modern measuring techniques for the **characterization** of the dispersions and the printed products.

Core competences of the network

- Customized development and formulation of decorative and functional pastes/inks for different materials and printing processes (incl. inkjet and screen printing)
- Optimisation of dispersion processes
- Characterisation and quality control of pastes, inks, coatings, printing processes and substrates
- Expertise on a wide variety of substrates and surface finishing options
- Development of custom-fit inkjet printing systems
- Wide range of applications from different industries (Printed electronics, additive manufacturing, Labels, advertising and packaging printing, …)
- Modern process engineering for the development synthesis, functionalization and dispersing of pigments and nanomaterials

We are looking forward to meet you!

To Printing Systems

Digital printing ideally serves the trend of **individualized** and **personalized** products in **small numbers**. Even complex 3d structures can be printed contactlessly and without the need for extra printing plates on various substrates.

The network pays particular attention to the mutual development of specialty inks and printhead technologies and keeps them in perfect alignment.